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Memorandum

From: Steve Willis **To:** Wayne Miller

Date: November 3, 2016

Subject: Site visit to observe well drilling activities at Former Williams AFB Site

ST012.

Wayne:

This memo summarizes my visit to Site ST012 conducted on November 3.

I arrived at the site at approximately 1:30 pm. Drilling of well LSZ54 at the north end of the cell phone lot was in progress, at a depth of 148-ft. I discussed results with Garrett and observed the drill cuttings. All PID reading recorded to that depth were <2 ppm. I did not detect any hydrocarbon odors in any cuttings. At approximately 2:30 pm drilling was halted due to an approaching storm. After a delay of about a half hour drilling resumed. The boring was drilled to a depth of 176-ft when activities were halted for the day due to rain and lightning. No evidence of hydrocarbon impact was observed in the remaining cuttings.

The Cobble Zone lithology was slightly coarser than that recorded in previous borings, consisting mainly of silty to gravelly sand, with several coarse sand and gravel lenses. Water was encountered at about 146-ft. The transition to the Upper Water Bearing Zone appeared to be between 156 and 158-ft.

I asked Garrett about the location of the next well, and he showed me where they cleared (i.e., potholed to 5-ft.) the location for well CZ23. I told him the location was not correct according to the map supplied in the Characterization Field Variance Memo, and the final location had not yet been agreed upon by the Air Force and regulatory agencies. He produced the site map he had, which was dated September 21 and showed the initial proposed well location prior to the September 29 FVM revised map. The map he had also did not include several other proposed wells. After some discussion, he placed a call to his supervisor to discuss the situation. At this time, well CZ23 is the only remaining location that has been cleared, and it's in the wrong location. I left the site at about 3:45 pm, at which time a decision had not

been made how AMEC will proceed with the drilling following the completion of well LSZ54.

Please contact me if you have comments or questions regarding this memo.

Thank you,
Standard AWM

SITE PHOTOS



Photo 1. Logging cuttings at well LSZ56



Photo 2. Collecting a PID reading



Photo 3. Cobble Zone cuttings at 144 – 148-ft. Groundwater encountered at about 146-ft.



Photo 4. Transition from Cobble Zone to UWBZ at about 156-ft.



Photo 5. Top: Cobble Zone cuttings just above water at about 140 – 142-Ft. Bottom: UWBZ cuttings at 164 - 166-ft.